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Paper Title:	Evaluating Marker-Based and Marker-less Motion Capture Systems in Reach-to-Grasp Task
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Abstract

This study compares the accuracy and precision of marker-based and marker-less motion capture systems in tracking reach-to-grasp movements, using electromagnetic tracking as a reference. Reach-to-grasp tasks are critical in daily activities and are often impaired in neurological conditions such as stroke, making their accurate measurement essential in rehabilitation research. The results indicate that the marker-based system consistently outperforms the marker-less system, with significantly lower root mean square errors (RMSE) across all axes. The marker-based system averaged an RMSE of 6.01 mm, demonstrating high precision suitable for clinical applications. In contrast, the marker-less system exhibited much higher RMSE values, averaging 79.16 mm, suggesting limitations in its use for precise motion tracking.
